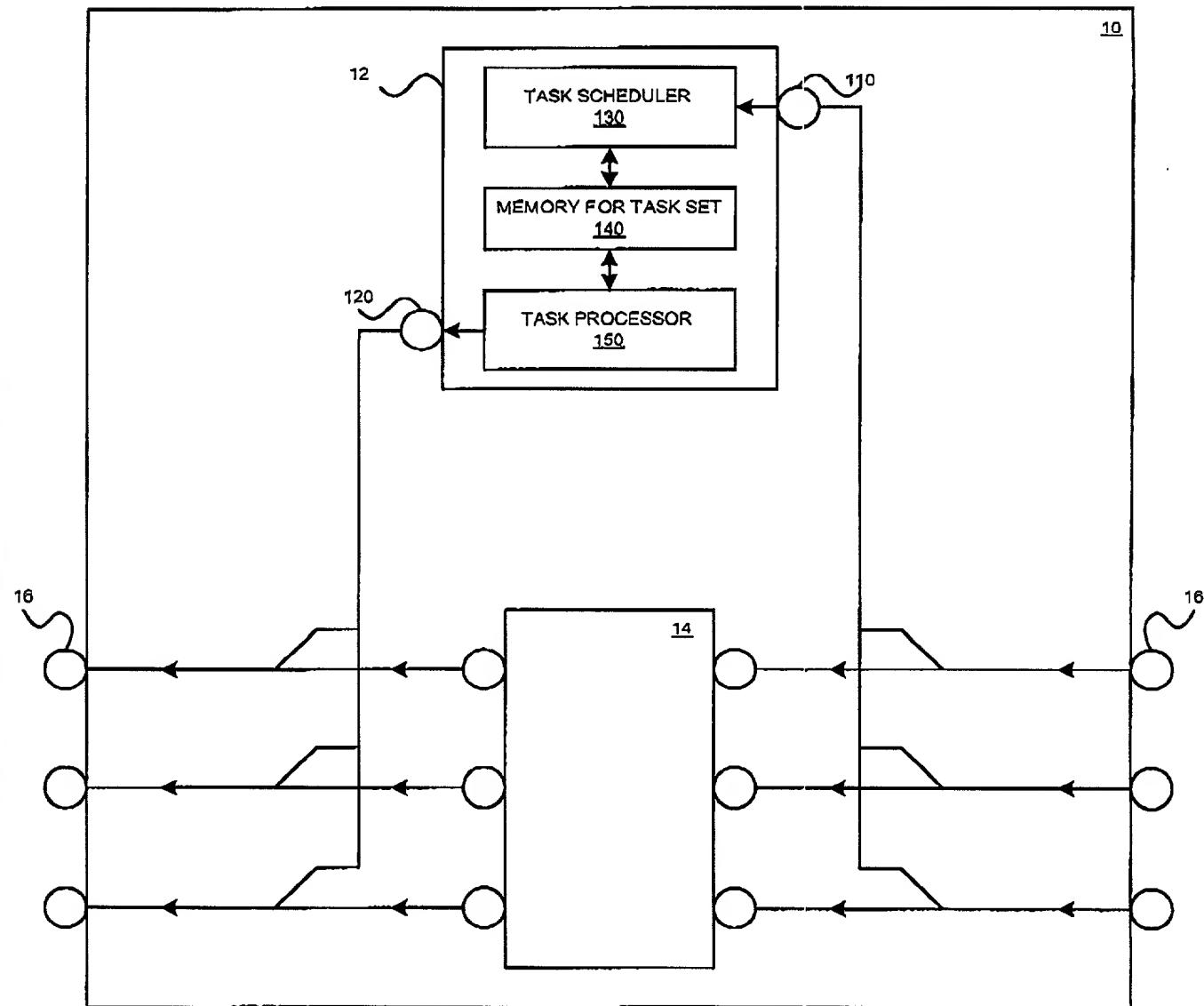


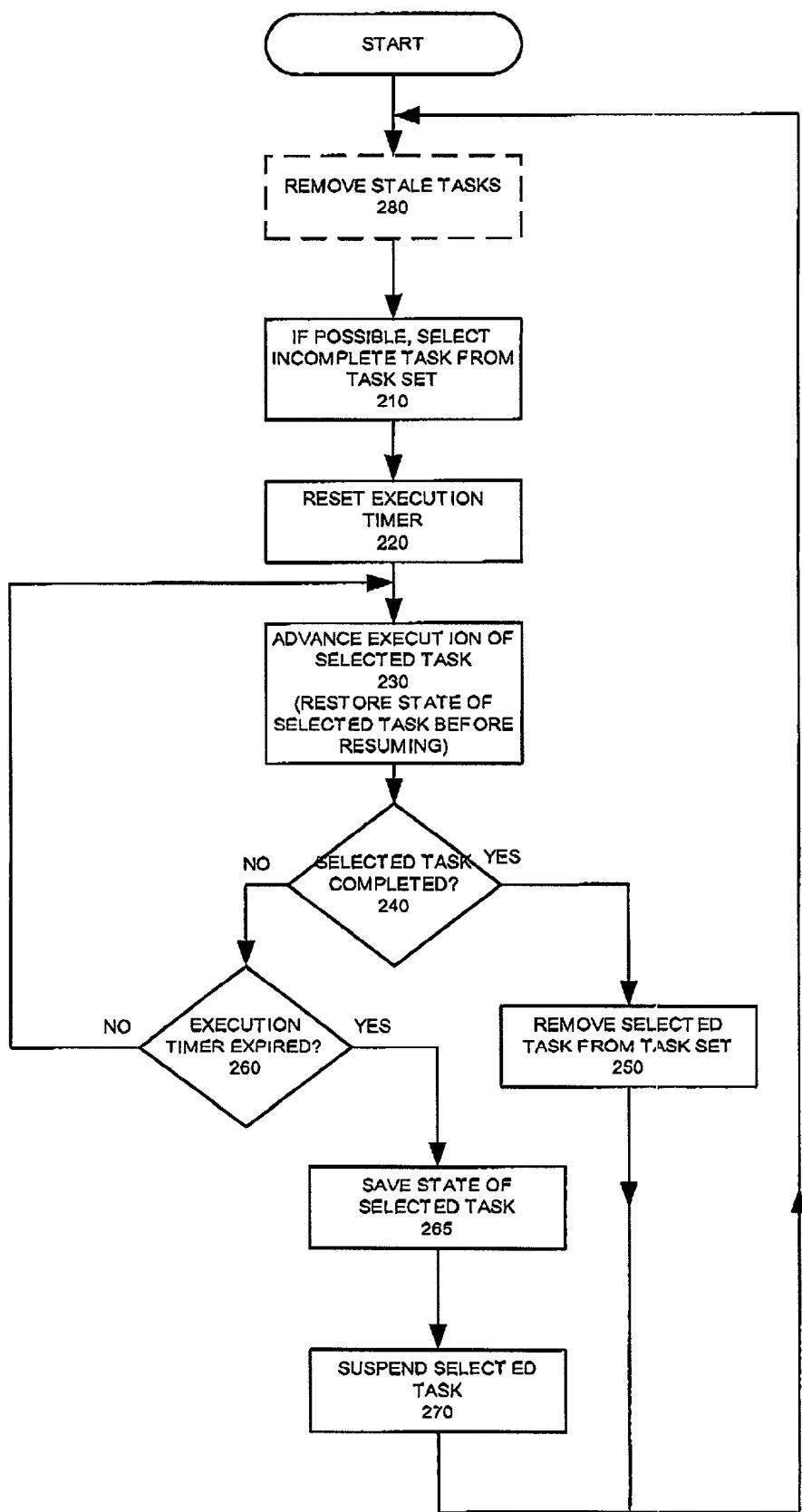
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Fig. 1



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Fig. 2



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**Fig. 3A: Evolution of task list 140 and activity of task scheduler 130 and task processor 150**

| TIME (ms) | Task scheduler activity            | Task processor activity (all execution intervals = 5 ms)   | State of task set immediately after TIME |
|-----------|------------------------------------|--|--|
| 0         | T1 (duration 3) added to task set  | T1 selected (210)<br>Execution timer reset (220)<br>T1 begun (230)   | T1 (0/3)                                 |
| 1         | --                                 | T1 ongoing (230)   | T1 (1/3)                                 |
| 2         | T2 (duration 16) added to task set | T1 ongoing (230)   | T1 (2/3); T2 (0/16)                      |
| 3         | --                                 | T1 completed and removed from task set (250)<br>T2 selected (210)<br>Execution timer reset (220)<br>T2 begun (230)                             | T2 (0/16)                                |
| 4         | --                                 | T2 ongoing (230)   | T2 (1/16)                                |
| 5         | --                                 | T2 ongoing (230)   | T2 (2/16)                                |
| 6         | --                                 | T2 ongoing (230)   | T2 (3/16)                                |
| 7         | --                                 | T2 ongoing (230)   | T2 (4/16)                                |
| 8         | --                                 | T2 context saved (265)<br>T2 suspended (270)<br>T2 selected (210)<br>Execution timer reset (220)<br>T2 resumed upon restoring T2 context (230) | T2 (5/16)                                |
| 9         | --                                 | T2 ongoing (230)   | T2 (6/16)                                |
| 10        | T3 (duration 13) added to task set | T2 ongoing (230)   | T2 (7/16); T3 (0/13)                     |
| 11        | T4 (duration 4) added to task set  | T2 ongoing (230)   | T2 (8/16); T3 (0/13); T4 (0/4)           |
| 12        | --                                 | T2 ongoing (230)   | T2 (9/16); T3 (0/13); T4 (0/4)           |
| 13        | --                                 | T2 context saved (265)<br>T2 suspended (270)<br>T3 selected (210)<br>Execution timer reset (220)<br>T3 begun (230);                            | T2 (10/16); T3 (0/13); T4 (0/4)          |
| 14        | --                                 | T3 ongoing (230)   | T2 (10/16); T3 (1/13); T4 (0/4)          |
| 15        | --                                 | T3 ongoing (230)   | T2 (10/16); T3 (2/13); T4 (0/4)          |
| 16        | --                                 | T3 ongoing (230)   | T2 (10/16); T3 (3/13); T4 (0/4)          |
| 17        | --                                 | T3 ongoing (230)   | T2 (10/16); T3 (4/13); T4 (0/4)          |
| 18        | --                                 | T3 context saved (265)<br>T3 suspended (270)<br>T4 selected (210)<br>Execution timer reset (220)<br>T4 begun (230)                             | T2 (10/16); T3 (5/13); T4 (0/4)          |

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**Fig. 3B: Evolution of task list 140 and activity of task scheduler 130 and task processor 150**

| TIME (ms) | Task scheduler activity | Task processor activity (all execution intervals = 5 ms)   | State of task set immediately after TIME |
|-----------|-------------------------|--|--|
| 19        | --                      | T4 ongoing (230)   | T2 (10/16); T3 (5/13); T4 (1/4)          |
| 20        | --                      | T4 ongoing (230)   | T2 (10/16); T3 (5/13); T4 (2/4)          |
| 21        | --                      | T4 ongoing (230)   | T2 (10/16); T3 (5/13); T4 (3/4)          |
| 22        | --                      | T4 completed and removed from task set (250)<br>T3 selected (210)<br>Execution timer reset (220)<br>T3 resumed upon restoring T3 (230)         | T2 (10/16); T3 (5/13)                    |
| 23        | --                      | T3 ongoing (230)   | T2 (10/16); T3 (6/13)                    |
| 24        | --                      | T3 ongoing (230)   | T2 (10/16); T3 (7/13)                    |
| 25        | --                      | T3 ongoing (230)   | T2 (10/16); T3 (8/13)                    |
| 26        | --                      | T3 ongoing (230)   | T2 (10/16); T3 (9/13)                    |
| 27        | --                      | T3 context saved (265)<br>T3 suspended (270)<br>T2 selected (210)<br>Execution timer reset (220)<br>T2 resumed upon restoring T2 context (230) | T2 (10/16); T3 (10/13)                   |
| 28        | --                      | T2 ongoing (230)   | T2 (11/16); T3 (10/13)                   |
| 29        | --                      | T2 ongoing (230)   | T2 (12/16); T3 (10/13)                   |
| 30        | --                      | T2 ongoing (230)   | T2 (13/16); T3 (10/13)                   |
| 31        | --                      | T2 ongoing (230)   | T2 (14/16); T3 (10/13)                   |
| 32        | --                      | T2 context saved (265)<br>T2 suspended (270)<br>T3 selected (210)<br>Execution timer reset (220)<br>T3 resumed upon restoring T3 context (230) | T2 (15/16); T3 (10/13)                   |
| 33        | --                      | T3 ongoing (230)   | T2 (15/16); T3 (11/13)                   |
| 34        | --                      | T2 ongoing (230)   | T2 (15/16); T3 (12/13)                   |
| 35        | --                      | T3 completed and removed from task set (250)<br>T2 selected (210)<br>Execution timer reset (220)<br>T2 resumed upon restoring T2 context (230) | T2 (15/16)                               |
| 36        | --                      | T2 completed and removed from task set (250)<br>Selection not possible (210)   | Empty                                    |

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**Fig. 4A: Evolution of task list 140 and activity of task scheduler 130 and task processor 150**

| TIME<br>(ms) | Task scheduler<br>activity                           | Task processor activity (all<br>execution intervals = 5 ms)  | State of task set immediately after<br>TIME                      |
|--------------|--|--|--|
| 0            | T1 (duration 3)<br>added to task set                 | T1 selected (210)<br>Execution timer reset (220)<br>T1 begun (230)   | T1 (0/3)   |
| 1            | --   | T1 ongoing (230)   | T1 (1/3)   |
| 2            | T2 (duration 11)<br>added to task set                | T1 ongoing (230)   | T1 (2/3); T2 (0/11)  |
| 3            | --   | T1 completed and removed<br>from task set (250)<br>T2 selected (210)<br>Execution timer reset (220)<br>T2 begun (230)  | T2 (0/11)  |
| 4            | --   | T2 ongoing (230)   | T2 (1/11)  |
| 5            | --   | T2 ongoing (230)   | T2 (2/11)  |
| 6            | --   | T2 ongoing (230)   | T2 (3/11)  |
| 7            | --   | T2 ongoing (230)   | T2 (4/11)  |
| 8            | --   | T2 context saved (265)<br>T2 suspended (270)<br>T2 selected (210)<br>Execution timer reset (220)<br>T2 resumed upon restoring<br>T2 context (230)  | T2 (5/11)  |
| 9            | --   | T2 ongoing (230)   | T2 (6/11)  |
| 10           | T3 (duration 13)<br>added to task set                | T2 ongoing (230)   | T2 (7/11); T3 (0/13)   |
| 11           | T2 <sub>new</sub> (duration 11)<br>added to task set | T2 <sub>old</sub> ongoing (230)  | T2 <sub>old</sub> (3/11); T3 (0/13); T2 <sub>new</sub><br>(0/11) |
| 12           | --   | T2 <sub>old</sub> ongoing (230)  | T2 <sub>old</sub> (3/11); T3 (0/13); T2 <sub>new</sub><br>(0/11) |
| 13           | --   | T2 <sub>old</sub> context saved (265)<br>T2 <sub>old</sub> suspended (270)<br>T2 <sub>old</sub> removed (280)<br>T3 selected (210)<br>Execution timer reset (220)<br>T3 begun upon restoring T3<br>context (230) | T2 (0/11); T3 (0/13)   |
| 14           | --   | T3 ongoing (230)   | T2 (0/11); T3 (1/13)   |
| 15           | --   | T3 ongoing (230)   | T2 (0/11); T3 (2/13)   |
| 16           | --   | T3 ongoing (230)   | T2 (0/11); T3 (3/13)   |
| 17           | --   | T3 ongoing (230)   | T2 (0/11); T3 (4/13)   |
| 18           | --   | T3 context saved (265)<br>T3 suspended (270)<br>T2 selected (210)<br>Execution timer reset (220)<br>T2 begun (230)   | T2 (0/11); T3 (5/13)   |

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**Fig. 4B: Evolution of task list 140 and activity of task scheduler 130 and task processor 150**

| TIME (ms) | Task scheduler activity | Task processor activity (all execution intervals = 5 ms)  | State of task set immediately after TIME |
|-----------|-------------------------|---|--|
| 19        | --                      | T2 ongoing (230)  | T2 (1/11); T3 (5/13)                     |
| 20        | --                      | T2 ongoing (230)  | T2 (2/11); T3 (5/13)                     |
| 21        | --                      | T2 ongoing (230)  | T2 (3/11); T3 (5/13)                     |
| 22        | --                      | T2 ongoing (230)  | T2 (4/11); T3 (5/13)                     |
| 23        | --                      | T2 context saved (265)<br>T2 suspended (270)<br>T3 selected (210)<br>Execution timer reset (220)<br>T3 resumed upon restoring<br>T3 context (230) | T2 (5/11); T3 (5/13)                     |
| 24        | --                      | T3 ongoing (230)  | T2 (5/11); T3 (6/13)                     |
| 25        | --                      | T3 ongoing (230)  | T2 (5/11); T3 (7/13)                     |
| 26        | --                      | T3 ongoing (230)  | T2 (5/11); T3 (8/13)                     |
| 27        | --                      | T3 ongoing (230)  | T2 (5/11); T3 (9/13)                     |
| 28        | --                      | T3 context saved (265)<br>T3 suspended (270)<br>T2 selected (210)<br>Execution timer reset (220)<br>T2 resumed upon restoring<br>T2 context (230) | T2 (5/11); T3 (10/13)                    |
| 29        | --                      | T2 ongoing (230)  | T2 (6/11); T3 (10/13)                    |
| 30        | --                      | T2 ongoing (230)  | T2 (7/11); T3 (10/13)                    |
| 31        | --                      | T2 ongoing (230)  | T2 (8/11); T3 (10/13)                    |
| 32        | --                      | T2 ongoing (230)  | T2 (9/11); T3 (10/13)                    |
| 33        | --                      | T2 context saved (265)<br>T2 suspended (270)<br>T3 selected (210)<br>Execution timer reset (220)<br>T3 resumed upon restoring<br>T3 context (230) | T2 (10/11); T3 (10/13)                   |
| 34        | --                      | T3 ongoing (230)  | T2 (10/11); T3 (11/13)                   |
| 35        | --                      | T3 ongoing (230)  | T2 (10/11); T3 (12/13)                   |
| 36        | --                      | T3 completed and removed from task set (250)<br>T2 selected (210)<br>Execution timer reset (220)<br>T2 resumed upon restoring<br>T2 context (230) | T2 (10/11)                               |
| 37        | --                      | T2 completed and removed from task set (250)<br>Selection not possible (210)  | Empty                                    |